

## **Remarks**

### **I. Summary of Office Action**

In the Office Action mailed June 20, 2005, the Examiner objected to the left margin of the original application, the Examiner provisionally rejected claims 1-6, 9-12 and 14 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims in copending Application No. 10/138,364, the Examiner rejected claims 1-5, 12, and 20-21 as being unpatentable over U.S. Patent No. 6,460,036 (Herz) in view of U.S. Patent No. 6,654,735 (Eichstaedt), the Examiner rejected claims 6, 8-11, 13-15, and 22 being unpatentable over Herz in view of Eichstaedt in further view of U.S. Patent No. 6,088,707 (Bates), the Examiner rejected claims 16-19 as being unpatentable over Herz in view of Eichstaedt in further view of Bates and in further view of U.S. Patent No. 5,724,567 (Rose), and the Examiner rejected claims 23-26 as being unpatentable over Herz in view of Eichstaedt in further view of Cooper et al, MCSE Supporting and Maintaining a Windows NT® Server 4.0 Network (Cooper).

### **II Summary of Claimed Subject Matter**

Now pending in this application are claims 1-6 and 8-26, of which claims 1, 6, 12, and 22 are independent and the remainder are dependent.

The invention as claimed includes functionality for measuring a user's interest in a given subject. Independent claim 1, for instance, includes the functionality of establishing a "count of web pages sent to a user" that contain "a threshold number of keywords related to the given subject." The count is then used "as a basis to establish a measure of the user's interest in the given subject."

Independent claims 6 and 22 similarly provide for establishing a “count of keywords related to the given subject,” but those claims further cap the count for each web page to a “predetermined maximum number of keywords.”

Independent claim 12 includes limitations requiring establishment of (i) a total page count representing the number of web pages sent to a user; (ii) a subject-specific page count representing the number of web pages sent to the user that have a threshold number of keywords related to the subject and; (iii) the count of keywords related to the subject that appear in the web pages. In claim 12, these concepts are combined to establish a measure of the user’s interest in the subject matter. Dependent claim 15 then provides that concepts (i)-(iii) be combined by multiplying the count of keywords (K) by the subject-specific count (S) divided by the total page count (P).  $[(K)(S)/(P)]$ .

### **III. Response to Objection regarding improper margins**

As noted above, the Examiner objected to informalities in the specification, noting that the left margins are less than one inch. In the prior response Applicant attached a substitute specification with proper margin formatting. A copy of the substitute specification is enclosed.

### **IV. Response to double patenting rejection.**

The Examiner provisionally rejected claims 1-6, 9-12 and 14 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims in copending Application No. 10/138,364. Because the rejection is only provisional, Applicant proposes to delay the determination of whether to file a terminal disclaimer until a point in time when the rejection becomes non-provisional.

## **V. Response to Obviousness Rejections.**

The Examiner rejected claims 1-6 and 8-26 as being obvious over various combinations of references. Under M.P.E.P. § 2143, in order for a combination of references to render a claim obvious, the combination must disclose or suggest all of the elements of the claim. Because the combinations presented fail to disclose or suggest all the elements of the claims, Applicants respectfully submit that the rejections are improper and should be withdrawn.

The following remarks specifically point out a number of failings of the references and several of the distinct features of the invention as claimed.

### **a) The References Do Not Relate Keywords to Subjects**

Each pending claim includes a limitation that associates the number of keywords in a document with a given subject. For instance, referring to the independent claims, claim 1 provides for “a threshold number of keywords related to the given subject;” claim 6 provides for a “count of keywords related to the given subject that appear in web pages sent to the user;” claim 12 provides for a “keyword count value, K, that represents a number of keywords related to the given subject that appear in web pages sent to the user;” and claim 22 provides for “program instructions . . . to establish a count of a number of keywords related to a given subject that appear in web pages sent to the user.”

The Examiner indicated that two references, Herz and Eichstaedt, relate to a user’s interest in a given subject or category. These references, however, do not disclose or suggest the above limitations – and thus do not obviate the claims under Section 103(a).

The Herz reference is related to customization of electronic newspapers and provides for the use of word counts and term frequency. Herz, Abstract, Col. 13, lines 5-17. Herz notes that it is possible to “correlate” synonym words by modifying its source texts – so that, for instance,

“JFK” becomes “John F. Kennedy” throughout a document. Herz, Col. 15, lines 25-34. Herz also provides an example application in a specific subject area (matching car buyers with car sellers). Herz, col. 17, lines 10-24.

In the latest Office Action, the Examiner concluded that the Herz operation expressly relates keywords to areas of interest of the user. *Citing* Herz, Col. 15, line 34 to Col. 16, line 1. Such a conclusion, however, cannot be drawn from the cited text. At best, the cited text in Herz provides guidance for “pre-alteration” of the text of individual documents to ensure that synonyms are treated in an identical fashion. Thus, “JFK” is replaced with “John F. Kennedy” and “staples” is replaced with “staple.” *This Herz spot-replacement method does not equate with the claimed linking of specific keywords with specific subjects.*

Rather than explicitly linking keywords to subjects, Herz consistently sticks to a term frequency (TF) measure that is based on a count of the bare words – not a count of words related to a given subject. See Herz Col. 13, lines 5-11. Herz delves into the details of its algorithm for monitoring page count at Col. 58, line 55 to Col. 60, line 11. In that section, Herz once again looks at a “word frequency” but does not count the number of keywords related to a given subject.

The examiner also appears to equate the Herz “similarity measure” as an explicit association of keywords related to a given subject. See Herz, col. 17, lines 10-24. In fact, the Herz similarity measure is calculated through a complex matrix calculation – finding the distance,  $d$ , between two attribute vectors each associated with a textual document. See Herz, Col. 58, line 55 to Col. 60, line 55. It is clear that the similarity measure is not an explicit association of keywords related to the given subject. As such, Herz’ discussion of using the similarity measure to compute the similarity between a buyer and seller is not applicable to an obviousness analysis. Herz. Col. 17, lines 10-28.

In the area of outbound information analysis, Eichstaedt discloses a taxonomy tree with leaf categories and inner categories and “maintains a weight vector [of interest level in the category],  $w$ , to measure the user’s current interest level in each category.” In Eichstaedt, the “weighting” occurs across multiple outbound queries to determine the user’s current interest level in each category. *However, in Eichstaedt, the subject/category is assigned and is associated with the document as a whole rather than with individual keywords.*

The approach of Herz and Eichstaedt is in stark opposition to the claimed invention. In the claimed invention, the document or query as a whole is not assigned to a subject. Rather, keywords within the document are related to the given subject. These keywords are counted (claims 1-28), their threshold determined (claims 1 and 12), capped (claims 6, 13, and 22), the counts summed (claim 8), and otherwise combined (see claims 12 and 15) in order to better establish the user’s interest in the given subject.

Because the cited references do not disclose or suggest a relation between keywords and the subject, the references cannot obviate the invention as claimed.

**b) The References Do Not Establish a Keyword Threshold.**

Claims 1 and 12 provide for establishing a count of web pages sent to a user that each contain *at least a threshold number of keywords related to the given subject*. Beneficially, the threshold number may allow for greater specificity in identifying interest in a given subject and also may reduce server load, for instance.

The Examiner indicated that the Herz discussion of a threshold in its similarity measure at Col. 17, lines 10-24 would obviate the threshold claimed limitation. Applicant respectfully disagrees. As indicated above, the Herz similarity measure, which measures the distance

between two attribute vectors, is not related to the claimed “count of the number of keywords related to the given subject.” The Herz threshold is a binary threshold measured as between two documents to determine whether the two documents are sufficiently matched. On the other hand, the claimed threshold is unitary and looks to a count of keywords associated with the given subject.

Bates also discloses a threshold – a threshold used to trigger a user notification indicating that a document has changes that are measured above the threshold. Bates, Abstract, Col. 11 lines 32-40 and Col 12, lines 40-55. The Bates threshold is critically different from that claimed. First, Bates is focused on changes in a document, and the threshold is a binary measure of the difference between a given document at two different times (relative change). As described above, this is different from the claimed threshold that is a unitary measure looking to a count of keywords associated with a given subject. Second, the Bates keyword trigger fails to associate any keywords with a given subject.

Because none of the cited references disclose or suggest taking an action based on whether a web page has at least a threshold number of keywords related to the given subject, the references cannot obviate independent claims 1 and 12 or their dependents.

**c) The References Do Not Cap The Keyword Count to a Predetermined Maximum Number of Keywords.**

Claims 6, 13, and 22 and their dependents provide for capping the keyword count for each web page to a predetermined maximum number of keywords. Beneficially, the cap may provide a mechanism for reducing skew and reducing server load.

The Examiner indicated that neither Herz nor Eichstaedt disclose “details regarding capping the count at a maximum predetermined number of keywords.” Office Action at 8. However, the Examiner found that Bates’ disclosure of a threshold keyword trigger also applies to the cap limitation.

As discussed above, the Bates threshold used to trigger a user notification indicating that a document has changes that are measured above the threshold is inapplicable even with respect to the threshold claim limitations. Even more compelling is the inapplicability of the Bates threshold trigger to the cap limitation. A threshold trigger takes an action when its keyed variable reaches a specified value. After that, the keyed variable may continue to increase its value. Conversely, a capped value will not rise above the specified value. As such in the claimed invention, capping serves to limit the recorded value of the count of keywords associated with the given subject. Furthermore, there is no indication in Bates that a threshold parameter would be recorded to memorialize the threshold trigger event.

Because none of the cited references disclose or suggest capping a keyword count at a predetermined maximum number of keywords, the references cannot obviate claims 6, 13, and 22 or their dependents.

**d) The Invention Provides a Unique Combination of Values as a Measure of User’s Interest in a Given Subject.**

Independent claim 12 provides for combining (i) a subject-specific page count value, S, that represents a number of web pages sent to the user that each contain at least a threshold number of keywords related to the given subject and (ii) a keyword count value, K, that represents a number of keywords related to the given subject that appear in web pages sent to the

user. According to the claim, these values, along with a total page count, P, are used in combination to establish a measure of the user's interest level in the given subject.

Dependent claim 15 provides that the value be combined by multiplying the count of keywords associated with the subject (K) with the subject-specific count (S) and then divide by the total page count (P).  $[(K)(S)/(P)]$ .

As discussed above the references do not disclose either the count of keywords related to the given subject (K) or the number of web pages received that contain the threshold number of keywords related to the given subject (S).

Additionally, the Examiner has not cited any reference that uses the three values in combination to establish a measure of the user's interest level in the given subject. *Because claim 12 is specifically limited to establishing a measure based on a method of combining the three values, a reference disclosing or suggesting such a method of combining must be identified in order to obviate the claim.* Up to now, no such reference has been identified. As noted by the Examiner, Herz discloses several algorithms. However, the Herz algorithms do not involve combining the three claimed measures.

Claim 15 provides a further limitation to claim 12 by reciting a specific algorithm used in the method of combining the three values.  $[(K)(S)/(P)]$ . The Examiner has not cited to any reference that discloses or suggests this particular algorithm. In fact, the limitation of claim 15 was not specifically addressed by the Examiner at all.

As such, Applicant requests a favorable reconsideration of claims 12, 15, and their dependents.



**VI. Conclusion**

In view of the foregoing, Applicant submits that claims 1-6 and 8-28 are in condition for allowance, and Applicant therefore respectfully request a favorable reconsideration.

Respectfully submitted,

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